UNION CARBIDE

"Contains NO CBI"

UNION CARBIDE CORPORATION 39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001

A

August 26, 1992

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

8EHQ-92-12124
INIT
88920010362

Document Processing Center (TS-790)
Room L-100
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Attn: Section 8(e) Coordinator (CAP Agreement)

Re: CAP Agreement Identification No. 8ECAP-0110

Dear Sir or Madam:

Union Carbide Corporation ("Union Carbide") herewith submits the following report pursuant to the terms of the TSCA §8(e) Compliance Audit Program and Union Carbide's CAP Agreement dated August 14, 1991 (8ECAP-0110). This report describes acute toxicity studies with Silicone A-143 (gamma-chloropropyl trimethoxysilane; CASRN 2530-87-2).

"Silicone A-143: Range Finding Toxicity Studies", Chemical Hygiene Fellowship (Carnegie-Mellon University), Special Report 37-111, December 6, 1974.

A complete summary of this report is attached.

Previous TSCA Section 8(e) or "FYI" Submission(s) related to this substance are:

(None)

Previous PMN submissions related to this substance are: (None)

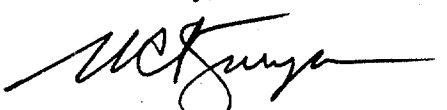
37-111

(2)

This information is submitted in light of EPA's current guidance. Union Carbide does not necessarily agree that this information reasonably supports the conclusion that the subject chemical presents a substantial risk of injury to health or the environment.

In the attached report the term "CONFIDENTIAL" may appear. This precautionary statement was for internal use at the time of issuance of the report. Confidentiality is hereby waived for purposes of the needs of the Agency in assessing health and safety information. The Agency is advised, however, that the publication rights to the contained information are the property of Union Carbide.

Yours truly,



William C. Kuryla, Ph.D.
Associate Director
Product Safety
(203/794-5230)

WCK/cr
Attachment (3 copies of cover letter, summary, and report)

SUMMARY

Special Report 37-111

Confidential

December 6, 1974
Tel: (412) 327-1020

CHEMICAL HYGIENE FELLOWSHIP
Carnegie-Mellon Institute of Research
Carnegie-Mellon University
4400 Fifth Avenue
Pittsburgh, Pa. 15213

Silicone A143

Range Finding Toxicity Studies

Sponsor: *Union Carbide Corporation*, Chemicals and Plastics Operations Division

* * * * *

Summary

Stomach Intubation, rat - LD50 = 9.51 ml/kg, undiluted.

Skin Penetration, rabbit - LD50 = 2.83 ml/kg, undiluted.

Inhalation, rat -
Substantially saturated vapor, static conditions at 20°C
8 hours killed 0 of 6.

Uncovered Skin Irritation, rabbit - trace, Grade 2.

Eye Injury, rabbit - none, Grade 1.

SUMMARY

Peroral, Single Dose to Rats

LD50 - 9.51 (6.30 to 14.4) ml/kg, undiluted.

Conditions - standard.

Dosage; ml/kg	Dead / Dosed	Days to Death	Weight Change	Signs and/or Symptoms
16.0	5/5	0,0,0,1,1	-	Sluggish, unsteady gait and pilo-erection 5 min; prostrate 8 min.; gasping 23 min.; convulsions 25 min., death of three 1 to 3.5 hr.
8.0	1/5	1	58 to 126	Rubbing mouth on bottom of cage 1 min., sluggish and deep breathing 2 min., prostrate with sporadic convulsions 7 min.
4.0	1/5	2	88 to 104	Sluggish and deep breathing 7 min., unsteady gait 18 min., salivation within 40 min.
1.0	0/2	-	108 & 110	-

Special Report 37-111
4 Pages
Confidential

December 6, 1974
Tel: (412) 327-1020

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Sponsor: *Union Carbide Corporation,* Chemicals **and** Plastics Operations Division

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Summary

Stomach Intubation, rat - LD50 = 9.51 ml/kg, undiluted.

Skin Penetration, rabbit - LD50 = 2.83 ml/kg, undiluted.

Inhalation, rat -
Substantially saturated vapor, static conditions at 20°C
8 hours killed 0 of 6.

Uncovered Skin Irritation, rabbit - trace, Grade 2.

Eye Injury, rabbit - none, Grade 1.

Interpretation

Silicone A143 was slightly toxic following acute peroral intubation and moderately toxic following acute covered dermal application. Trace or no irritation resulted when the undiluted material was applied to rabbit skin or eyes. No hazard is anticipated from the infrequent inhalation of substantially saturated vapor evolved at room temperature under normal handling conditions.

Sample

Quantity: 1 pint
Date Received: 10-7-74
CHF Sample No.: 37-534
Submitted by: H. C. Givens
Division: Chemicals and Plastics
Sistersville, WV
Identification: Lot 210053073
Charge No.: 01069

Peroral, Single Dose to Rats

LD50 - 9.51 (6.30 to 14.4) ml/kg, undiluted.

Conditions - standard.

Dosage; ml/kg	Dead / Dosed	Days to Death	Weight Change	Signs and/or Symptoms
16.0	5/5	0,0,0,1,1	-	Sluggish, unsteady gait and pilo-erection 5 min; prostrate 8 min.; gasping 23 min.; convulsions 25 min., death of three 1 to 3.5 hr.
8.0	1/5	1	58 to 126	Rubbing mouth on bottom of cage 1 min., sluggish and deep breathing 2 min., prostrate with sporadic convulsions 7 min.
4.0	1/5	2	88 to 104	Sluggish and deep breathing 7 min., unsteady gait 18 min., salivation within 40 min.
1.0	0/2	-	108 & 110	-

Gross Pathology - in victims, livers mottled; kidneys pale, speckled and slightly congested; stomachs distended, gas and liquid filled; intestines distended, liquid filled and yellow; bladders full. In survivors, livers mottled & surface of spleens rough.

Conclusions - slightly toxic following acute peroral intubation.

Skin Penetration, Single Dose to Rabbits

LD50 - 2.83 (1.73 to 4.62) ml/kg, undiluted.

Conditions - standard. Dosed under polyethylene sheeting.

Dosage; ml/kg	Dead / Dosed	Days to Death	Weight Change	Skin Irritation	Signs and/or Symptoms
16.0	2/2	1,1	-	erythema, ecchymosis	Fur wet, prostration and cold to the touch before death.
4.0	4/4	1,1,1,2	-	erythema	Nose bleeding, fur wet and cold to the touch on 1 rabbit before death.
2.0	0/4	-	205, 340, 358, 565	-	-
1.0	0/2	-	133, 418	-	-

Gross Pathology - lungs and kidneys congested.

Conclusions - moderately toxic following acute covered dermal application.

Inhalation, Single, by Rats

Conditions - Procedure B to 20°C.

Procedure	Time	Concentration	Dead/Dosed	Days to Death	Weight Change	Signs and/or Symptoms
B	8 Hr.	Substantially saturated vapor	0/6	-	51 to 71	-

Gross Pathology - pneumonia in 2 rats, otherwise nothing remarkable.

Conclusions - no hazard is anticipated from the infrequent inhalation of substantially saturated vapor evolved at room temperature under normal handling conditions.

Skin Irritation, Rabbit, Uncovered

Conditions - standard.
applied undiluted.

Conclusions - moderate capillary injection on 2, no irritation on 3 rabbits. Grade 2.

Eye Irritation, Rabbit

Conditions - standard.
instilled undiluted.

Conclusions - no corneal injury on 5 eyes from an excess, 0.5 ml per eye. Grade 1.

Roy C. Myers

Roy C. Myers, B.S.
Research Associate

Carrol S. Weil

Carrol S. Weil, M.A.
Senior Fellow

Approved:

Charles P. Carpenter

Charles P. Carpenter, Ph.D.
Administrative Fellow

Acknowledgments:

Skin Penetration, Irritation Tests — Naomi I. Condra, B.S., Fellow
Inhalation Studies — Daniel L. Geary, Jr., M.S., Junior Fellow
Single Peroral Test — Linda D. Calisti, B.S., Res. Associate

Date: December 13, 1974

Typed: dp

Standard Test Procedures

In all tests, the nonfasted animals are maintained on appropriate Rockland diets and water ad lib except during period of manipulation or confinement. Dosage levels differ by a factor of 2 in a geometric series. LD50s or LC50s are calculated by the moving average method based on a 14-day observation period.

Peroral. Compounds administered by stomach intubation to Wistar derived male rats, 90-120 grams in weight and 3 to 4 weeks of age, reared in our own colony.

Skin Penetration. Male albino rabbits, 3 to 5 months of age, are immobilized during the 24-hour contact period with the compound retained under impervious sheeting on the clipped intact skin of the trunk. Thereafter, excess fluid is removed to prevent ingestion. Maximum dosage that can be retained is 20 ml./kg.

Inhalation. Procedure A. Concentrated vapor is generated in a gas washing bottle by passing dried air at 2.5 liters/min. through a fritted glass disc immersed to a depth of at least 1-1/2 inches in the chemical which is delivered to rats in a 9-liter glass exposure chamber. Mean vapor concentration is calculated from the loss in weight of the liquid or estimated from the vapor pressure at the actual temperature of the chemical during aeration.

Procedure B. Substantially saturated vapor is prepared by spreading 50 grams of chemical over 200 $cm.^2$ area on shallow tray placed near the top of a 120-liter glass chamber which is then sealed for at least 16 hours while an intermittently operated fan agitates the internal chamber atmosphere. Rats are then introduced in a gasketed drawer-type cage designed and operated to minimize vapor loss.

Procedure C. Mist, vapor and any oxidation or decomposition products of the chemical held at 170°C. are generated and delivered as in A.

Procedure D. Vapor at metered concentration, not checked analytically, is generated by feeding the liquid at a constant rate down the inside of a spirally corrugated surface of a minimally heated one inch Pyrex tube, through which metered air is passed. Resultant vapor is delivered as in A.

Procedure E. Spray - Solutions or suspensions are atomized in a glass VAPONEFRIN nebulizer using dried compressed air at 9 liters/min. (corrected) and 22 p.s.i. The resultant aerosol of droplets averaging 2 microns in diameter is conducted directly into a 60-liter cubic glass chamber containing rats. Mean aerosol concentration is calculated from the amount of material atomized.

Procedure F. Dust - Dust clouds are generated by a baffled Wright Dust Feed through which air is passed at 20 liters/min. (uncorrected) at 15 p.s.i. The dust is delivered directly to a 120-liter plexiglas chamber containing rats. Airborne dust concentrations are measured gravimetrically every half hour.

Skin Irritation. Chemical is applied in 0.01 ml. amounts to clipped, uncovered intact skin of 5 rabbit bellies either undiluted or in progressive dilutions of 10, 1, 0.1, and 0.01% in solvent. Ten grades are recognized based on appearance of moderate or marked capillary injection, erythema, edema or necrosis within 24 hours. No injury from undiluted = Grade 1.

Eye Irritation. Eyes not staining with 5% fluorescein in 20 seconds contact are accepted. Single instillation of 0.005, 0.02, 0.10 or 0.5 ml. undiluted or of 0.5 ml. of 40, 15, 5 and 1% dilutions are made into conjunctival sac of 5 rabbits. Read immediately unstained and after fluorescein at 24 hours, with ten grades recognized. Trace or no injury from 0.5 ml. undiluted = Grade 1.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

William C. Kuryla, Ph.D.
Associate Director, Product Safety
Union Carbide Corporation
39 Old Ridgebury Road
Danbury, Connecticut 06817-0001

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MAY 0 8 1995

EPA acknowledges the receipt of information submitted by your organization under Section 8(e) of the Toxic Substances Control Act (TSCA). For your reference, copies of the first page(s) of your submission(s) are enclosed and display the TSCA §8(e) Document Control Number (e.g., 8EHQ-00-0000) assigned by EPA to your submission(s). Please cite the assigned 8(e) number when submitting follow-up or supplemental information and **refer to the reverse side of this page for "EPA Information Requests"** .

All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims. This information is required and should be submitted if not done so previously. To substantiate claims, submit responses to the questions in the enclosure "Support Information for Confidentiality Claims". This same enclosure is used to support confidentiality claims for non-CAP submissions.

Please address any further correspondence with the Agency related to this TSCA 8(e) submission to:

Document Processing Center (7407)
Attn: TSCA Section 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
Washington, D.C. 20460-0001

EPA looks forward to continued cooperation with your organization in its ongoing efforts to evaluate and manage potential risks posed by chemicals to health and the environment.

Sincerely,

Terry R. O'Bryan

Terry R. O'Bryan
Risk Analysis Branch

Enclosure

12124A

Triage of 8(e) Submissions

Date sent to triage: MAY 0 9 1995

NON-CAP (CAP)

Submission number: 12124A

TSCA Inventory: (Y) N D

Study type (circle appropriate):

Group 1 - Dick Clements (1 copy total)

ECO AQUATO

Group 2 - Ernie Falke (1 copy total)

(ATOX) SBTOX SEN (w/NEUR)

Group 3 - Elizabeth Margosches (1 copy each)

STOX CTOX EPI RTOX GTOX

STOX/ONCO CTOX/ONCO IMMUNO CYTO NEUR

Other (FATE, EXPO, MET, etc.): _____

Notes:

THIS IS THE ORIGINAL 8(e) SUBMISSION; PLEASE REFILE AFTER TRIAGE DATABASE ENTRY

For Contractor Use Only

entire document: (0) 1 2 **pages** 1,2 **pages** 1,2,3,4

Notes:

Contractor reviewer : PML **Date:** 4/26/95

CECATS\TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA:
Submission #: 8EHQ- 0992-12124 SEQ. A

TYPE: (INT.) SUPP FLWP

SUBMITTER NAME: Union Carbide Corporation

INFORMATION REQUESTED: FLWP DATE:
0501 NO INFO REQUESTED
0502 INFO REQUESTED (TECH)
0503 INFO REQUESTED (VOL ACTIONS)
0504 INFO REQUESTED (REPORTING RATIONALE)

DISPOSITION:
(0639) REFER TO CHEMICAL SCREENING
(0678) CAP NOTICE

VOLUNTARY ACTIONS:
(0401) NO ACTION REPORTED
0402 STUDIES PLANNED/UNDERWAY
0403 NOTIFICATION OF WORKER/OTHERS
0404 LABEL/MSDS CHANGES
0405 PROCESS/HANDLING CHANGES
0406 APP./USE DISCONTINUED
0407 PRODUCTION DISCONTINUED
0408 CONFIDENTIAL

SUB. DATE: 08/26/92 OTS DATE: 09/01/92 CSRAD DATE: 03/14/95

CHEMICAL NAME: Silicone A-143

CAS#: 2530-87-2

INFORMATION TYPE:		P F C
0201	ONCO (HUMAN)	01 02 04
0202	ONCO (ANIMAL)	01 02 04
0203	CELL TRANS (IN VITRO)	01 02 04
0204	MUTA (IN VITRO)	01 02 04
0205	MUTA (IN VIVO)	01 02 04
0206	REPRO/TERATO (HUMAN)	01 02 04
0207	REPRO/TERATO (ANIMAL)	01 02 04
0208	NEURO (HUMAN)	01 02 04
(0209)	NEURO (ANIMAL)	01 (02) 04
0210	ACUTE TOX. (HUMAN)	01 02 04
0211	CHR. TOX. (HUMAN)	01 02 04
(0212)	ACUTE TOX. (ANIMAL)	01 (02) 04
0213	SUB ACUTE TOX (ANIMAL)	01 02 04
0214	SUB CHRONIC TOX (ANIMAL)	01 02 04
0215	CHRONIC TOX (ANIMAL)	01 02 04

INFORMATION TYPE:		P F C
0216	EPI/CLIN	01 02 04
0217	HUMAN EXPOS (PROD CONTAM)	01 02 04
0218	HUMAN EXPOS (ACCIDENTAL)	01 02 04
0219	HUMAN EXPOS (MONITORING)	01 02 04
0220	ECO/AQUA TOX	01 02 04
0221	ENV. OCCC/REL/FATE	01 02 04
0222	EMER INCI OF ENV CONTAM	01 02 04
0223	RESPONSE REQEST DELAY	01 02 04
(0224)	PROD/COMP/CHEM ID	01 02 04
0225	REPORTING RATIONALE	01 02 04
0226	CONFIDENTIAL	01 02 04
0227	ALLERG (HUMAN)	01 02 04
0228	ALLERG (ANIMAL)	01 02 04
0239	METAB/PHARMACO (ANIMAL)	01 02 04
0240	METAB/PHARMACO (HUMAN)	01 02 04

INFORMATION TYPE:		P F C
0241	IMMUNO (ANIMAL)	01 02 04
0242	IMMUNO (HUMAN)	01 02 04
0243	CHEM/PHYS PROP	01 02 04
0244	CLASTO (IN VITRO)	01 02 04
0245	CLASTO (ANIMAL)	01 02 04
0246	CLASTO (HUMAN)	01 02 04
0247	DNA DAM/REPAIR	01 02 04
0248	PROD/USE/PROC	01 02 04
0251	MSDS	01 02 04
0299	OTHER	01 02 04

ATOX

TRIAGE DATA: NON-CBI INVENTORY
(YES)
CAS SR NO
(DETERMINI)

ONGOING REVIEW
YES (DROP/REFER)
NO (CONTINUE)
REFER

SPECIES
RAT
RBT

TOXICOLOGICAL CONCERN:
(LOW)
MED
HIGH

USE:

PRODUCTION:

(COMMENTS)

-CPSS- 0927952113

0 0 0 0 0 0 0 0 0 0 0 0
> <ID NUMBER>
8(E)-12124A

> <TOX CONCERN>
L

> <COMMENT>
ACUTE ORAL TOXICITY IN RATS IS LOW CONCERN BASED ON AN LD50 OF 9.51 ML/KG. DOSE (ML/KG) AND MORTALITY: 1.0 (0/2), 4.0 (1/5), 8.0 (1/5), AND 16.0 (5/5). CLINICAL SIGNS INCLUDED SLUGGISHNESS, UNSTEADY GAIT, PILO-ERECTION, PROSTRATION, GASPING, CONVULSIONS, RUBBING MOUTH ON CAGE BOTTOM, AND SALIVATION. PATHOLOGY OF DECEDENTS REVEALED LIVERS - MOTTLED; KIDNEYS - PALE, SPECKLED, SLIGHTLY CONGESTED; STOMACHS - DISTENDED, GAS AND LIQUID- FILLED; AND INTESTINES - DISTENDED, YELLOW, LIQUID-FILLED. NECROPSY OF SURVIVORS REVEALED LIVERS MOTTLED AND ROUGH SPLEEN SURFACE.

ACUTE DERMAL TOXICITY IS LOW CONCERN IN RABBITS BASED ON AN LD50 OF 2.83 ML/KG. DOSE (ML/KG) AND MORTALITY: 1.0 (0/2), 2.0 (0/4), 4.0 (4/4), AND 16 (2/2). CLINICAL SIGNS INCLUDED WET FUR, PROSTRATION, COLD TO TOUCH, AND NOSE BLEEDING. PATHOLOGY REVEALED CONGESTED LUNGS AND KIDNEYS.

ACUTE INHALATION TOXICITY IN RATS IS LOW CONCERN. ANIMALS WERE EXPOSED TO SUBSTANTIALLY SATURATED VAPORS OF TEST MATERIAL FOR 8 HOURS AND NO MORTALITY OCCURRED (0/6). NO CLINICAL SIGNS WERE NOTED AND PATHOLOGY REVEALED PNEUMONIA IN 2 ANIMALS.

SKIN IRRITATION IN RABBITS IS LOW CONCERN. TEST MATERIAL IS CLASSIFIED AS GRADE 2. CLINICAL SIGNS INCLUDED MODERATE CAPILLARY INJECTION IN 2 OUT OF 5.

EYE INJURY IN RABBITS IS LOW CONCERN. 0.5 ML OF TEST MATERIAL CAUSED NO REACTION. TEST MATERIAL IS CONSIDERED GRADE 1.

$$$$